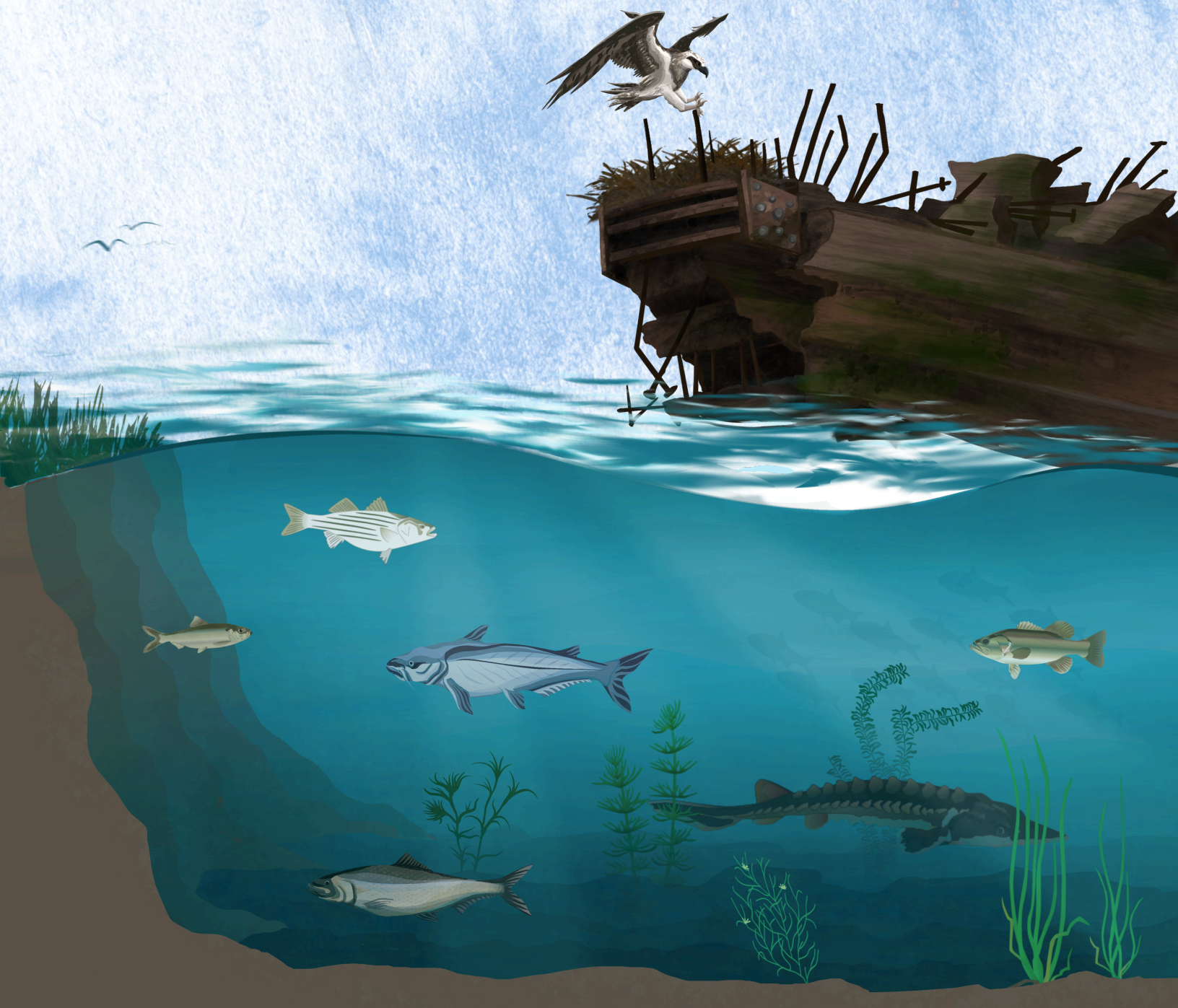


**MALLOWS BAY—
POTOMAC RIVER**
NATIONAL MARINE SANCTUARY

Activity Book





About the Sanctuary

Mallows Bay-Potomac River National Marine Sanctuary is part of the National Marine Sanctuary System, an over 620,000 square mile network of underwater parks. These special places, managed by NOAA's Office of National Marine Sanctuaries, protect some of the most iconic underwater areas in the United States.

Mallows Bay-Potomac River National Marine Sanctuary is the largest wooden ship graveyard in the Western Hemisphere. The sanctuary protects and interprets over 140 shipwrecks, the most famous of which are the World War I-era wooden steamships, known as the "Ghost Fleet."

The Ghost Fleet ships were built between 1917 and 1919 to support the U.S. involvement in World War I, but the war ended before they could be used. In the early 1920s, over 100 of these steamships were purchased by private salvage companies and brought to the Potomac River, where they were taken apart for their materials until the 1940s.

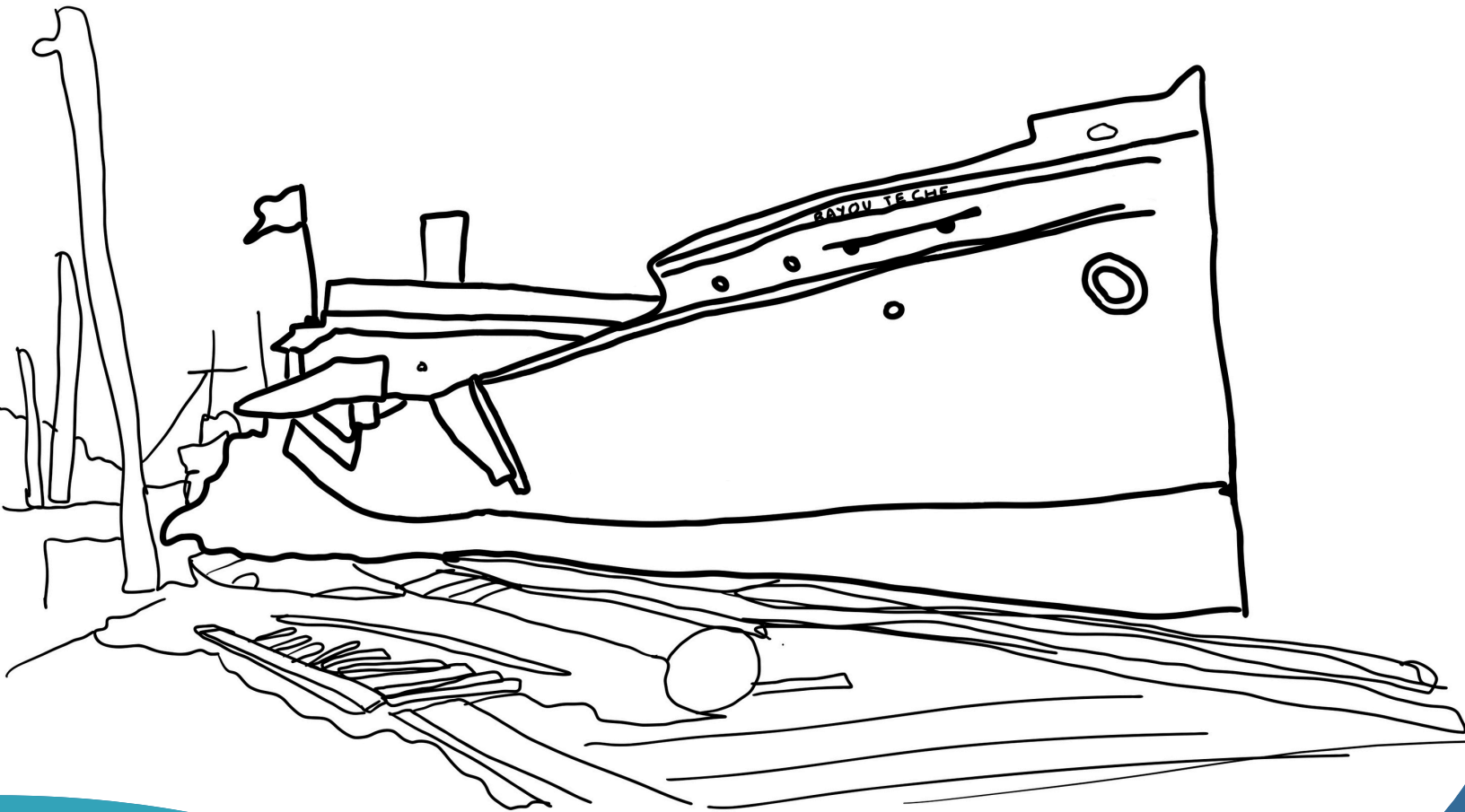
Over the last 100 years, nature has overtaken these shipwrecks and transformed them into islands of life. They now form habitats for many fish, plants, and animals such as ospreys, bald eagles, herons, beavers, and more. Thousands of people visit each year to boat, kayak, fish, birdwatch, hike, and more in and around the sanctuary!



Uncover History

Mallows Bay contains over 140 shipwrecks that were built for World War I. Did you know that most of the shipwrecks are almost 300 feet long? That's the size of a football field!

Color one of the sanctuary ships, the *Bayou Teche*, below!
How might it have looked when it was first built?





Ghost Fleet Word Search

Can you find the names of the Mallows Bay shipwrecks in the sea of letters below?

B	O	O	N	E	T	S	E	A	S	C	O	U	T	P
U	X	C	A	S	I	J	U	L	N	Z	G	K	Z	I
C	P	A	M	W	B	F	C	O	P	A	W	O	W	A
K	R	D	E	R	T	O	N	A	Y	C	L	I	F	F
H	E	N	C	T	K	K	J	P	S	C	O	Z	H	R
O	V	B	K	H	M	U	E	W	D	O	V	R	I	A
R	A	V	I	I	N	O	L	E	L	M	B	E	L	N
N	L	F	G	L	C	E	Y	A	W	A	H	B	K	I
W	P	D	H	R	A	G	D	S	I	C	E	A	O	A
Q	A	U	O	A	R	B	F	F	K	T	D	O	N	G
P	C	N	C	E	I	H	M	U	G	E	R	W	Y	B
K	O	Z	B	N	B	E	N	Z	O	N	I	A	H	M
M	W	A	N	M	O	D	Z	F	M	F	M	H	Z	N
J	Q	Y	E	X	U	S	A	J	N	Q	L	Y	R	O
H	A	B	W	A	D	M	O	O	S	A	B	E	E	L

Alpaco
Sea Scout
Mono

Afrania
Buckhorn
Aowa

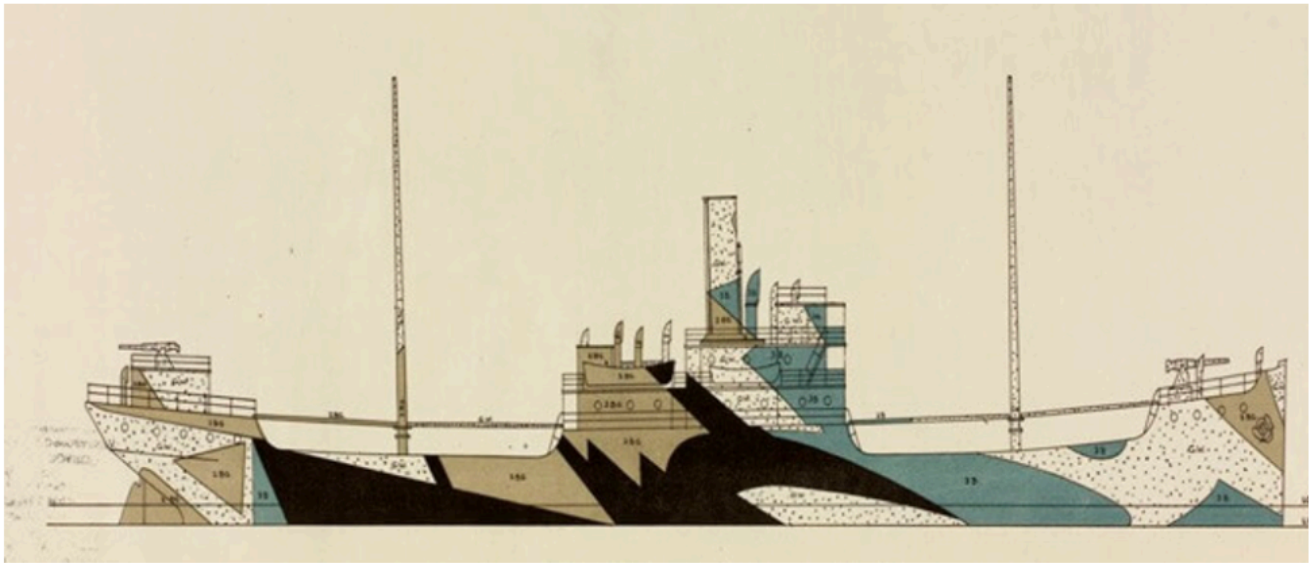
Yawah
Caribou
Accomac

Namecki
Moosabee
Boone

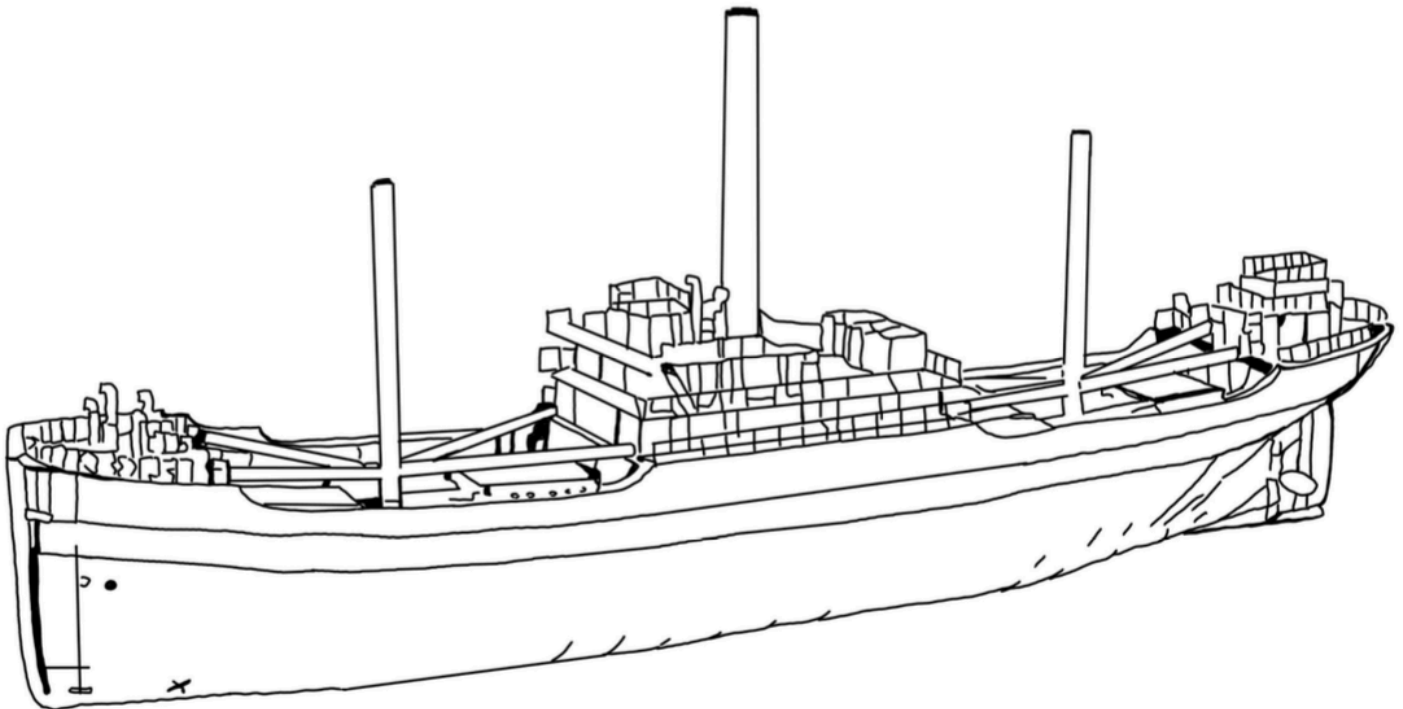
Dertona
Benzonia

Dazzle Design

Dazzle painting is a type of ship camouflage that was used in World War I. Each ship's dazzle pattern was a unique print of opposite colors and shapes, making ships harder for the enemy to identify and difficult to attack.



Draw your own Dazzle Design on the ship below!





Shipwreck Word Scramble

Can you unscramble these words about the sanctuary shipwrecks?

1. GOHST TFELE _____

Hint: What the collection of shipwrecks at Mallows Bay is called.

2. WBO _____

Hint: The front part of a ship.

3. TSNRE _____

Hint: The back part of a ship.

4. FEWORL PTO _____

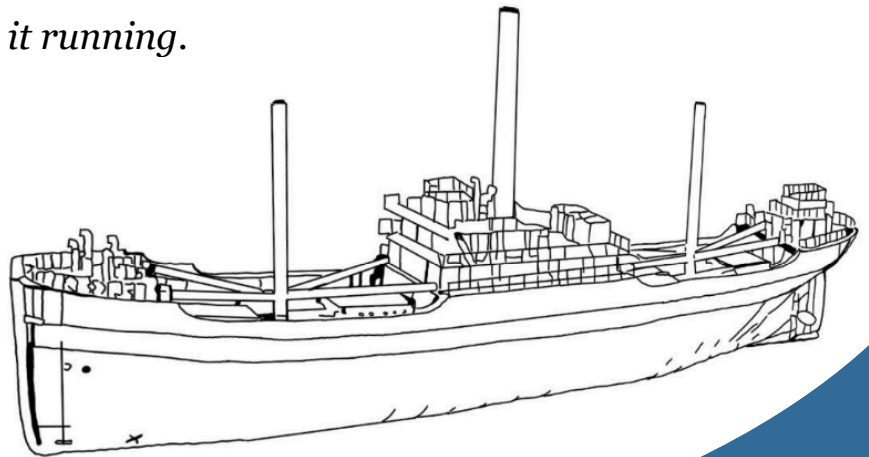
Hint: A nickname for the shipwrecks in Mallows Bay that contain plants.

5. CAHNRO _____

Hint: A tool that helps hold the ship in place.

6. NEGNIE _____

Hint: Powers the ship to keep it running.





History and Nature Intertwined

The shipwrecks of Malloys Bay-Potomac River National Marine Sanctuary are now part of the natural landscape. Shipwrecks nicknamed “flower pots” grow trees and other plants, providing homes for birds, fish, and many other animals.

Color the nature scene below. What animals might live here?

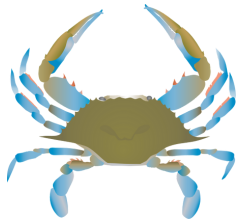




Habitat Matching Game

Mallows Bay-Potomac River National Marine Sanctuary has many habitats that are home to different critters, both on land and in the water.

Can you help each critter find its home? Draw a line from each animal or plant below to match it with the river or forest habitat.



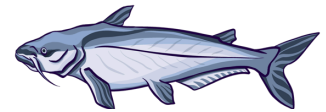
Blue Crab



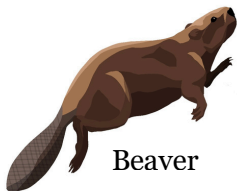
Red Fox



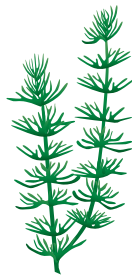
Rabbit



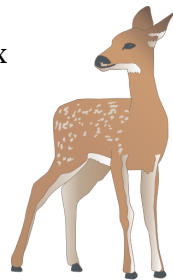
Blue Catfish



Beaver



Coontail



White-Tailed Deer



Wild Celery



Largemouth Bass



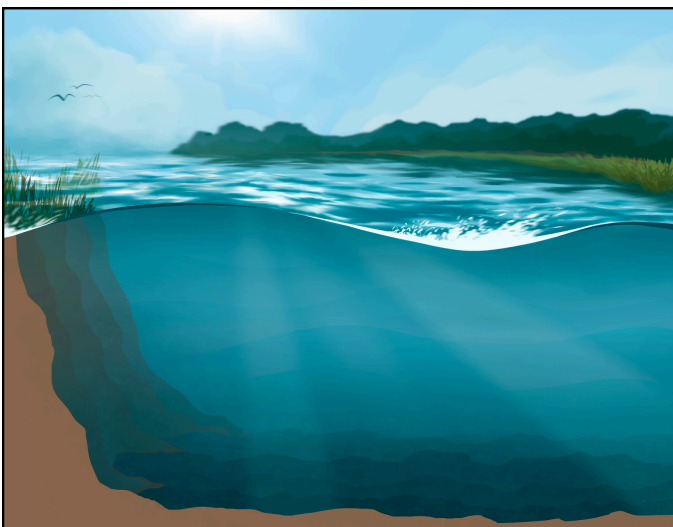
Wild Turkey



Raccoon



Owl



Tidal River



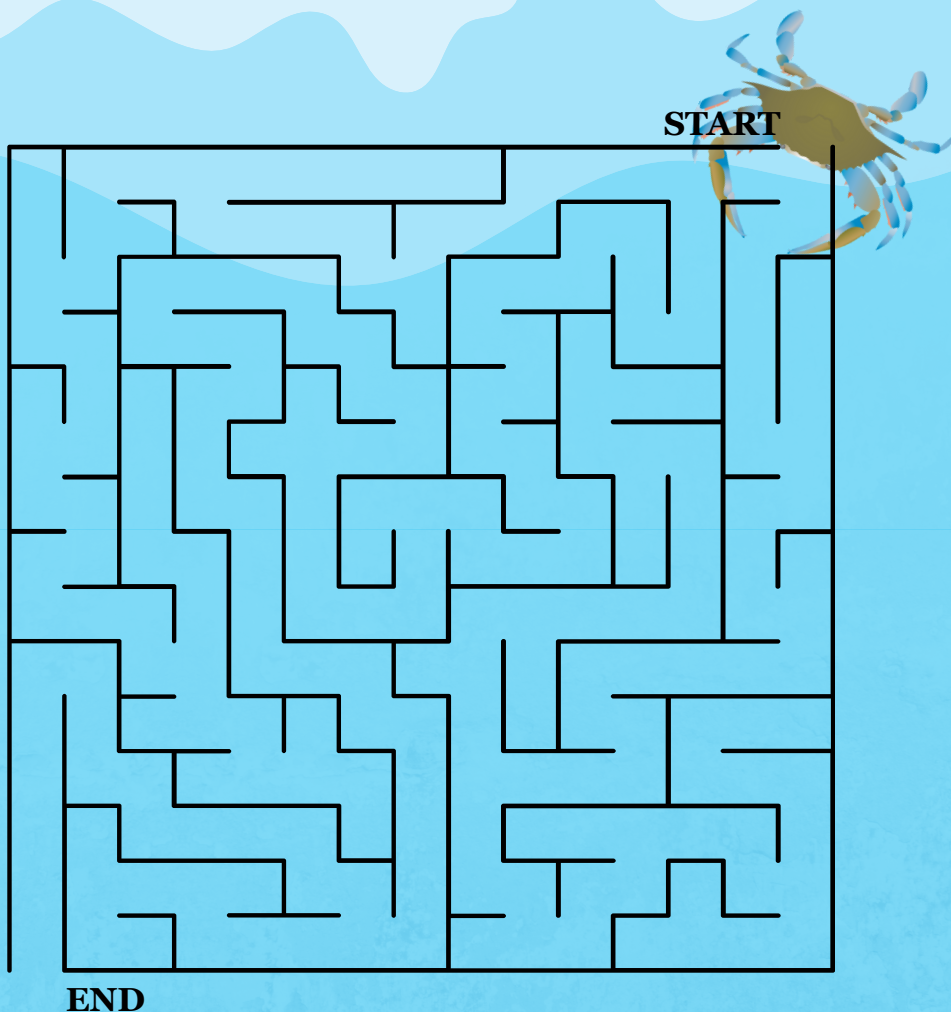
Forest

Underwater Grass Maze

Underwater seagrasses and bay grasses are an important habitat. They provide food and shelter for fish and crabs and help keep the water clean from pollution!

There are a dozen different types of underwater grasses in the sanctuary.

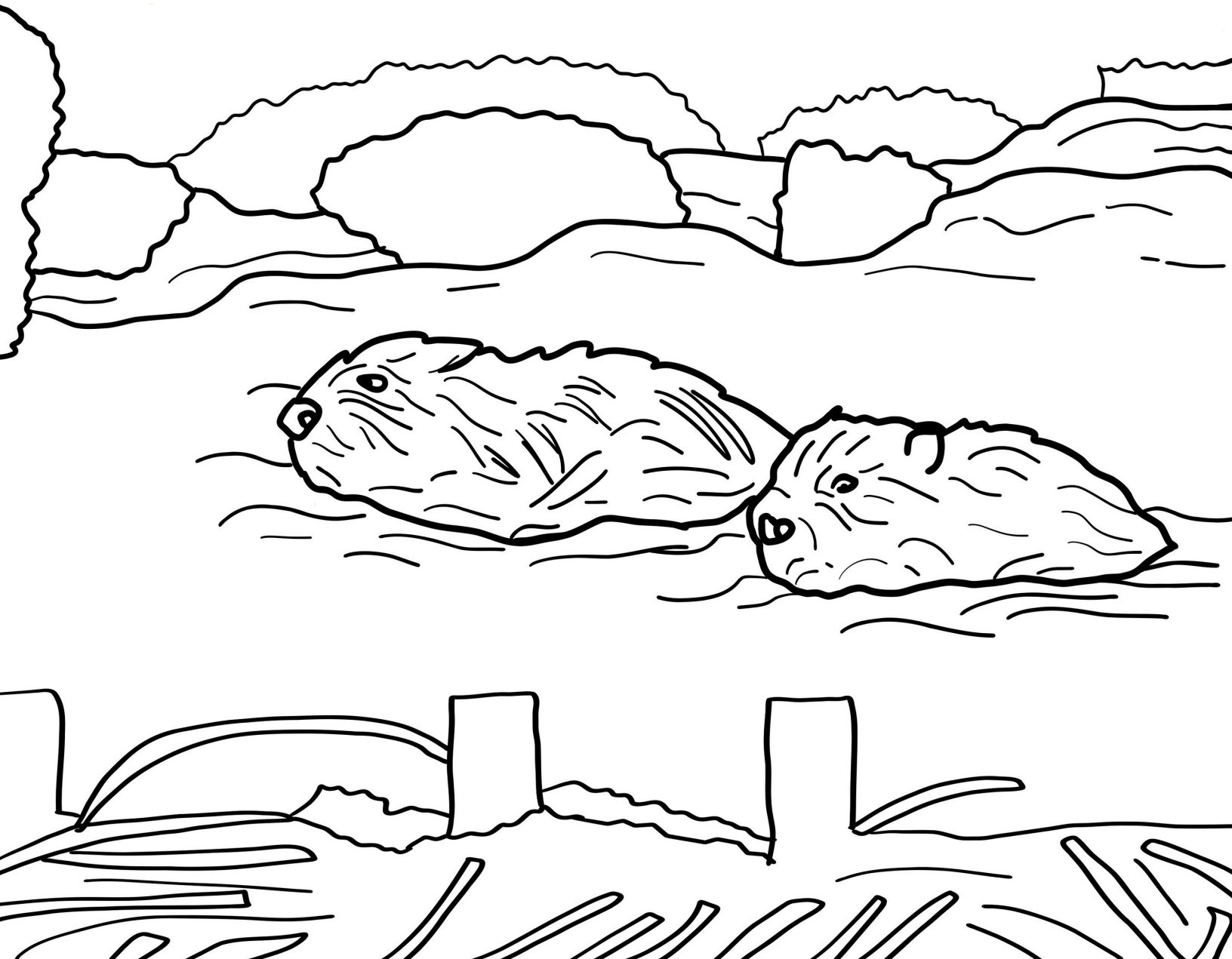
Can you help the blue crab find its way home to the bay grass?



Ecosystem Engineers

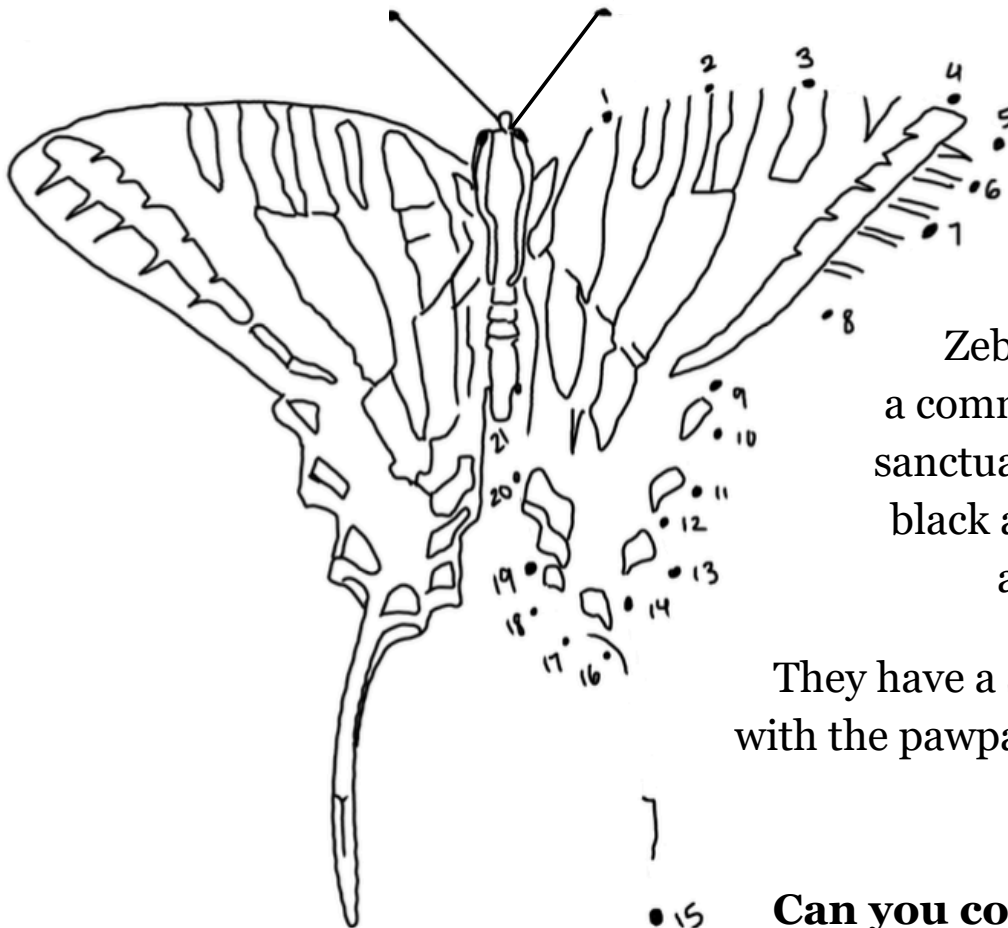
Beavers are a mammal that play an important role in the ecosystem. They build dams that create wetland habitats, which supports many plants and animals. They live in lodges that they build with sticks and logs. In the sanctuary, some beavers build their lodges in the shipwrecks of the Ghost Fleet!

Color the Mallows Bay beavers below!



Forest Critters

Mallows Bay Park, the gateway to the sanctuary, contains forests and meadows that are home to mammals, birds, reptiles, and more.



Zebra swallowtails are a common butterfly in the sanctuary, named for their black and white markings and long wing tails.

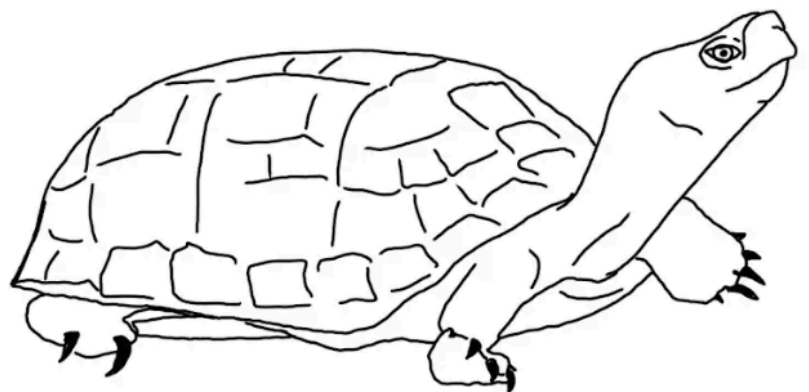
They have a special relationship with the pawpaw tree, laying their eggs on its leaves.

Can you connect the dots to complete the wing?

Box turtles are a common reptile in the sanctuary that live in the woods. They often live 40-50 years or more!

Box turtles each have a unique shell pattern with orange and yellow markings.

Design your own box turtle shell!





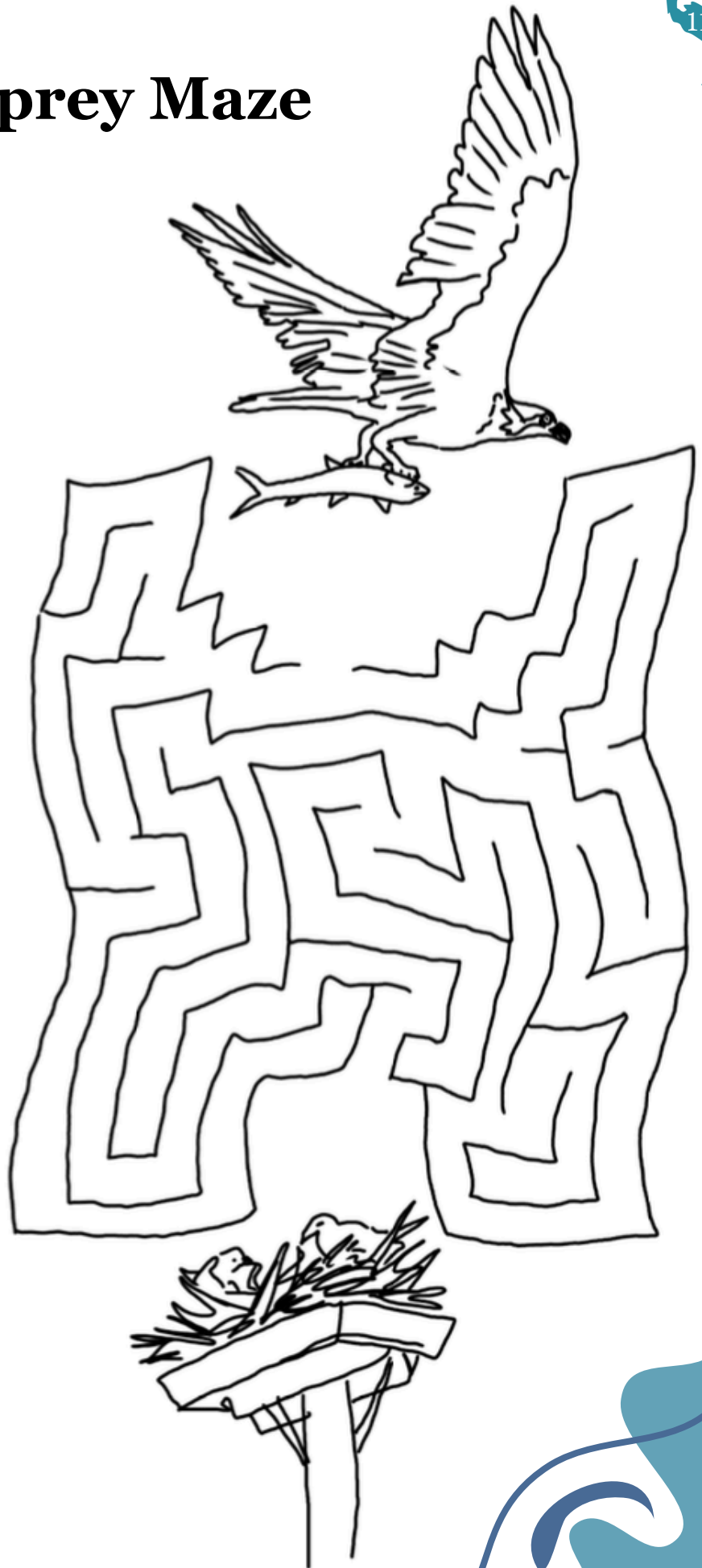
Osprey Maze

Ospreys are a large raptor that live in the sanctuary from March through August. In the winter, they migrate to Central and South America.

Ospreys are also called “fish hawks” because 99% of their diet is fish!

Ospreys mate for life and return to the same nest every spring. In the sanctuary, some ospreys build their nests on the shipwrecks of the Ghost Fleet!

Can you help the osprey bring back a fish to the chicks in the nest?



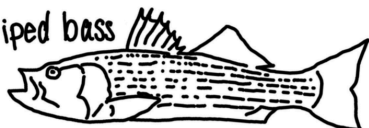
Fish Friends

Sturgeon



Atlantic sturgeon are a rare fish that can be found in the sanctuary. They can grow up to 15 feet long and have been on Earth for 200 million years!

Striped bass



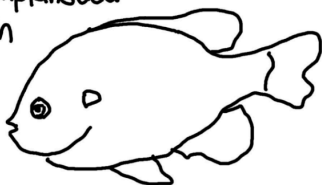
Striped bass can live in both fresh and salt water. They can live up to 40 years old and never stop growing during that time.

Eel



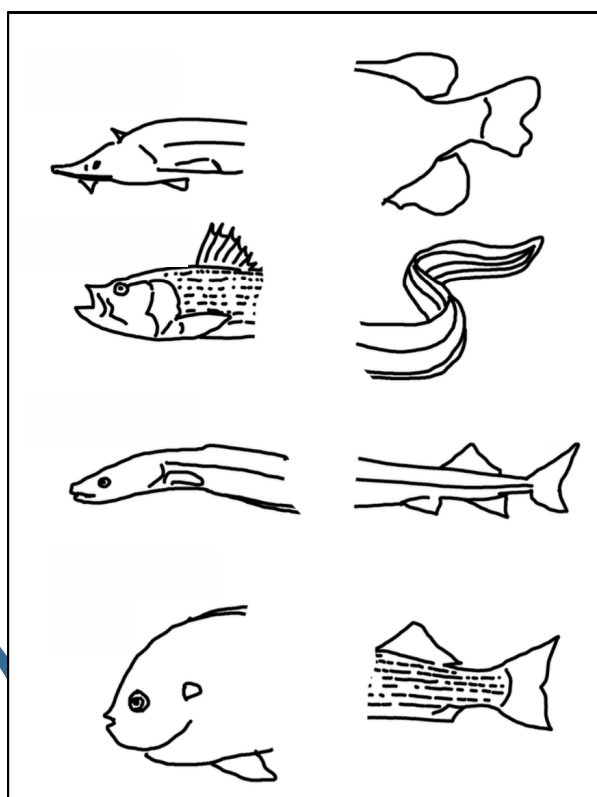
American eels are brown fish with a long, slender body. They live in freshwater and migrate all the way to the ocean to lay their eggs.

Pumpkinseed fish



The pumpkinseed fish is a small sunfish that is named for the shape of its body, which resembles a pumpkin seed.

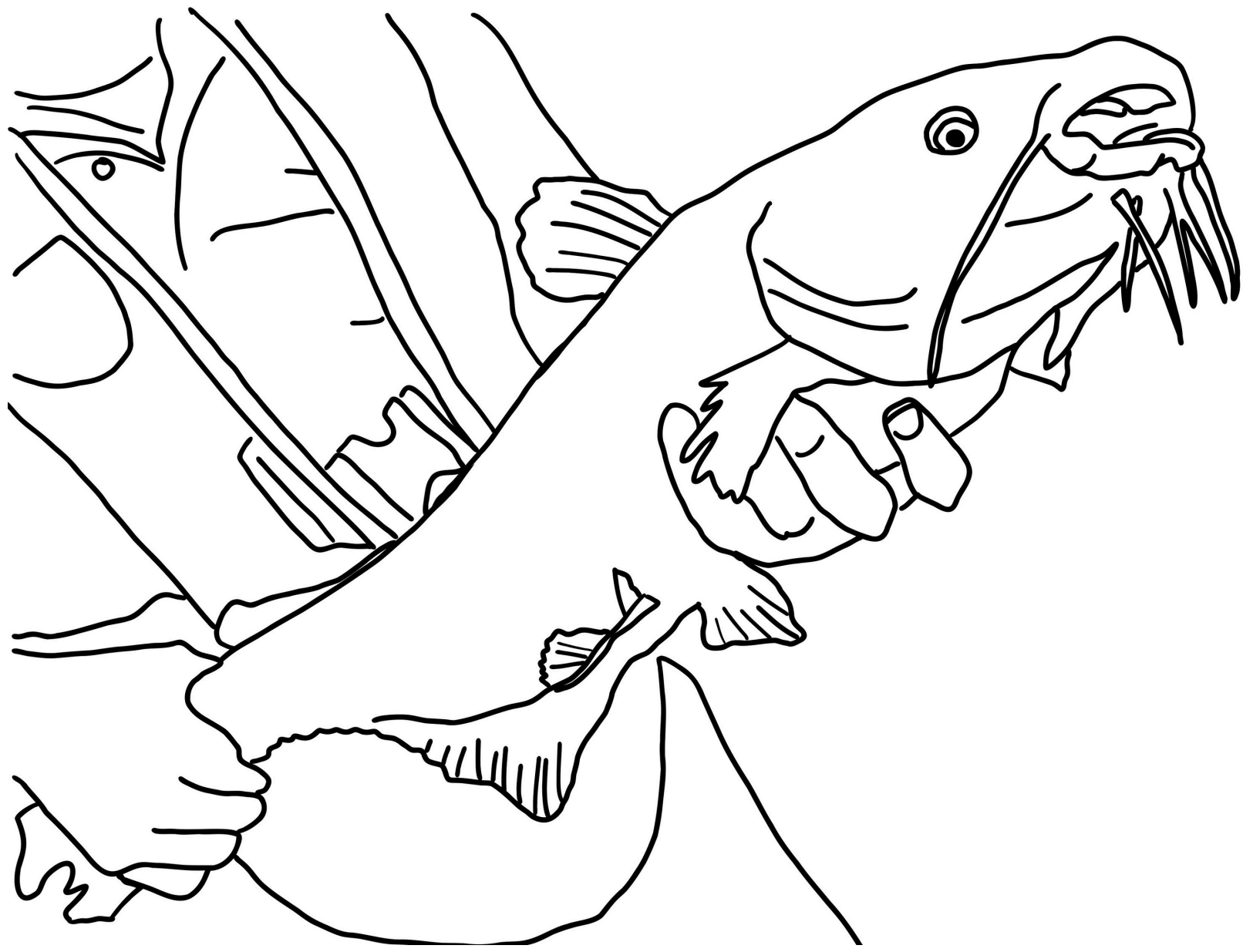
Can you draw a line from the head of each fish to its tail?



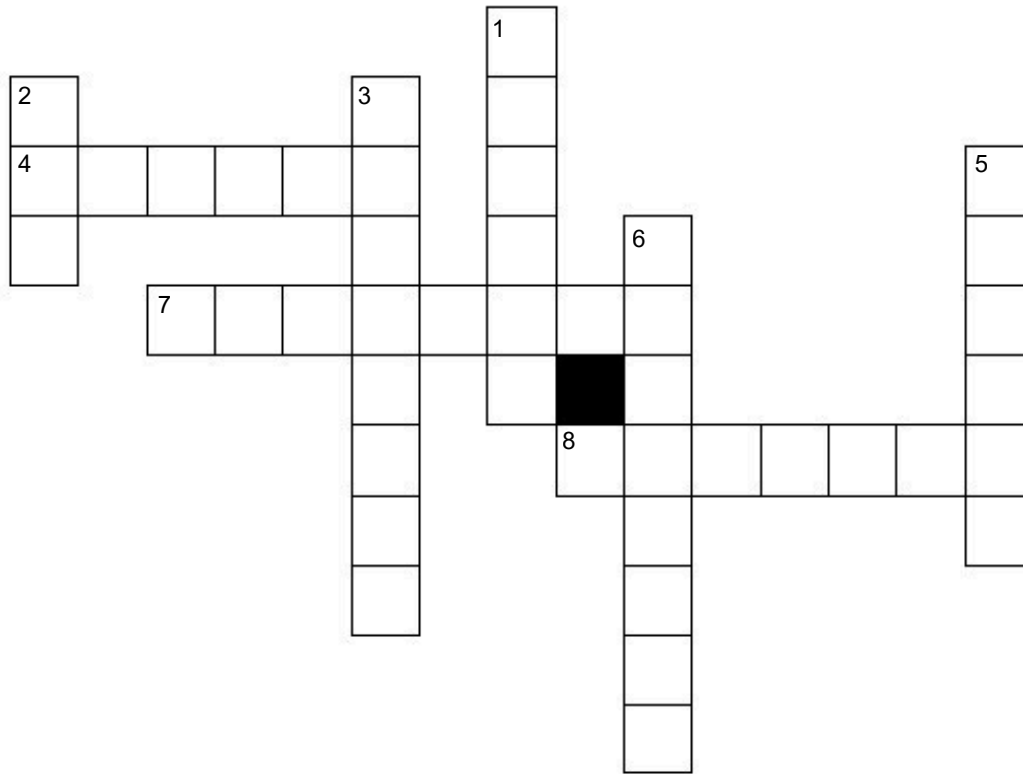
Non-Native Species

Non-native (or sometimes called invasive) species live in areas they are not naturally found and can cause problems in the ecosystem. Some invasive aquatic plants, like **hydrilla**, grow really big and block sunlight and waterways, causing problems for native grasses and animals in the area. Some animals, like **blue catfish**, eat the food that native fish rely on.

Color the blue catfish below. You can help reduce their population in the sanctuary by catching and eating them!



Crossword Puzzle



Across

4. Bird of prey that lives in Mallows Bay from March to August
7. An endangered fish that can grow up to 15 feet long
8. Warm-blooded creatures found near Mallows Bay

Word Bank

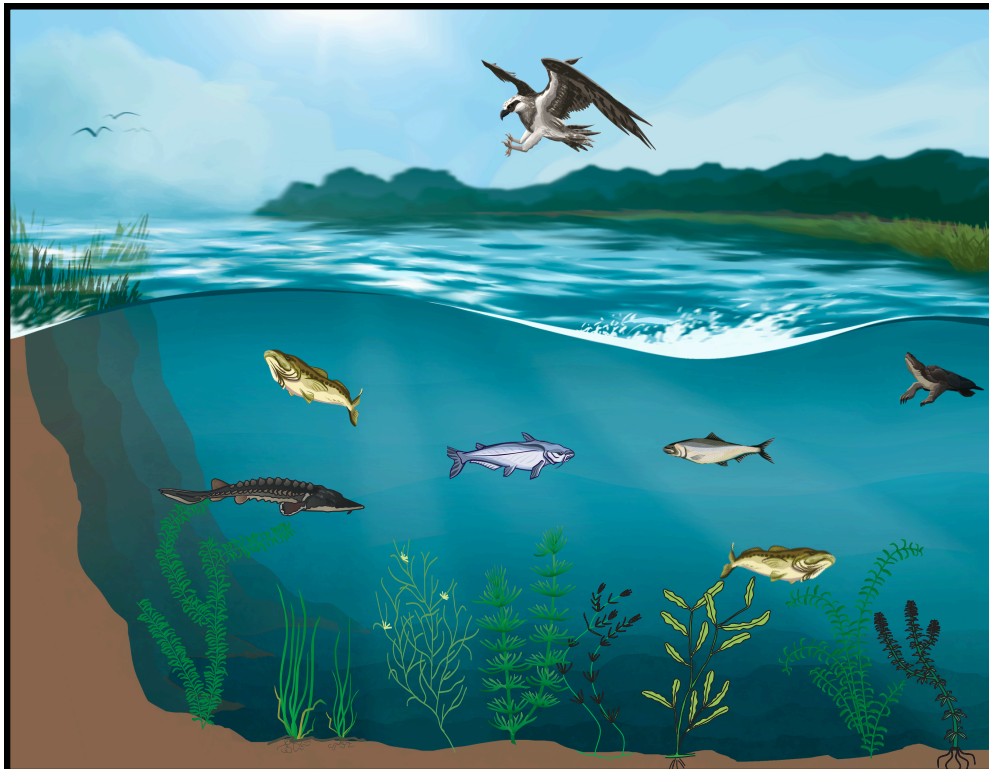
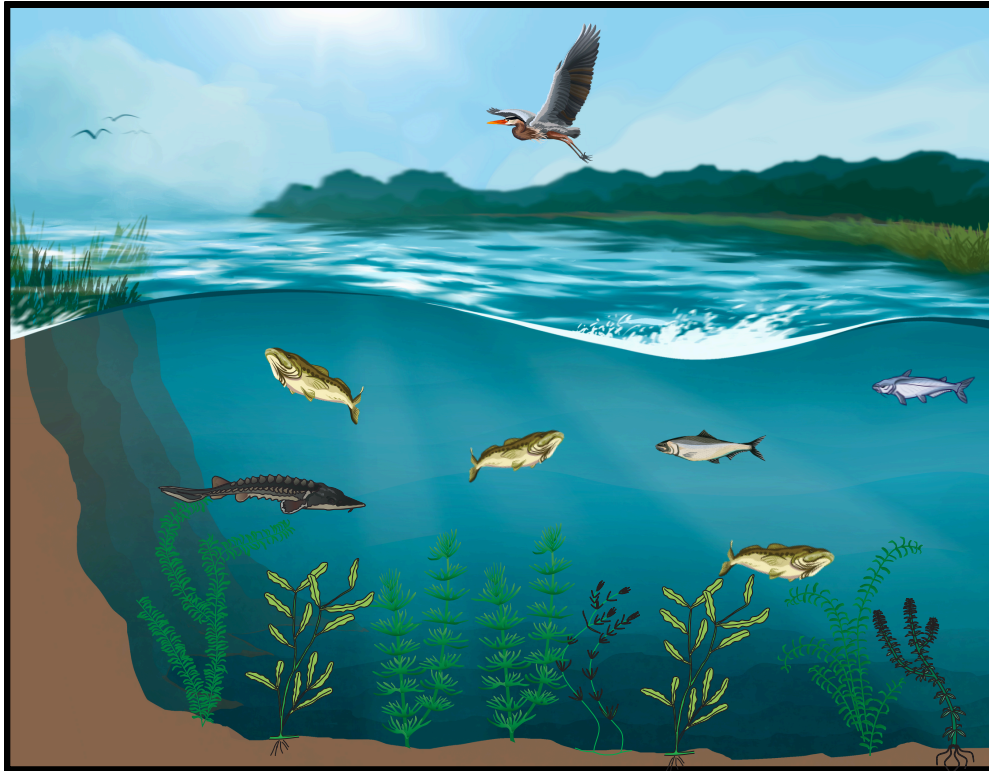
Pawpaw	Beaver
Invasive	Osprey
Mammals	Box
Sturgeon	Hydrilla

Down

1. A mammal that builds a dam in the water
2. Turtle that has a tall shell with yellow and orange markings
3. Underwater grass that is not native to Mallows Bay
5. A tree with edible fruit that tastes like mangoes and bananas
6. A non-native species is also often called this

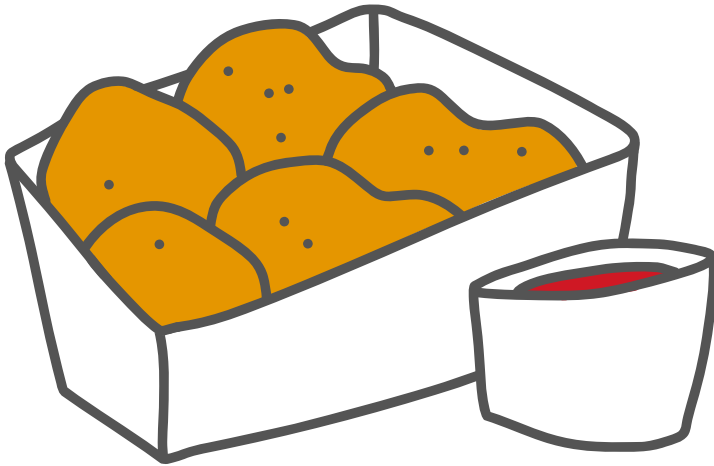
Spot the Difference

Can you find the five differences between the top and bottom images? Circle each one!



Air Fryer Snakehead Nuggets

Snakehead are a delicious, non-native fish that you can catch in the sanctuary!



Courtesy of Maryland Department of
Natural Resources
Wild Maryland Cookbook
Recipe Submitted By: Patrick McCabe



Ingredients

- Snakehead filets (at least two fillets from a 20-inch fish)
- 3/4 cup flour
- 2 eggs
- 1 splash of water
- 3/4 cup bread crumbs
- 1 teaspoon Old Bay seasoning
- 3/4 teaspoon salt
- 1/2 teaspoon pepper
- 1/4 teaspoon ground mustard

Directions

1. Cut snakehead filets into nugget-sized pieces.
2. Put flour, eggs, and bread crumbs into 3 separate bowls.
3. Add a splash of cold water to the eggs and mix together.
4. Add spices to the bread crumbs.
5. Dip nuggets into flour, then egg mixture, then bread crumbs.
6. Place dipped nuggets into the air fryer (best if done in batches).
7. Cook for 9 minutes at 380°F, flipping nuggets halfway.
8. Before serving, cut into the bigger nuggets to ensure they're cooked.
9. Serve with your favorite dipping sauce!

Jeannie's Crab Dip Recipe



Courtesy of Maryland Department of
Natural Resources
Wild Maryland Cookbook
Recipe Submitted By:
Jeannie Haddaway-Riccio

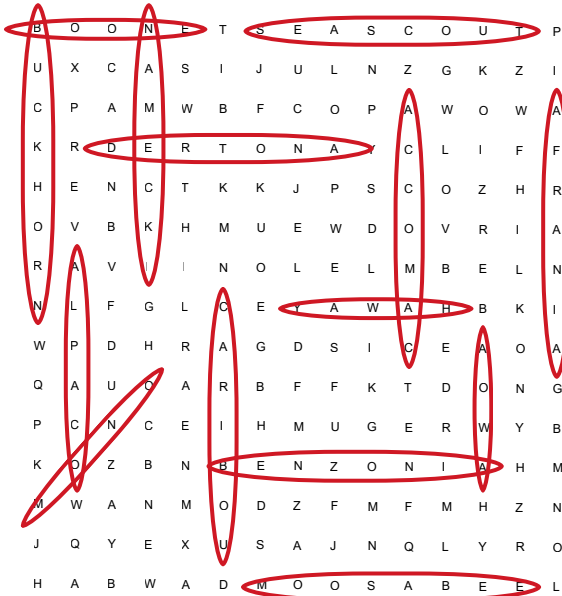
Ingredients

- 1 lb crab meat
- 4 tbsp mayonnaise
- 2 tsp stone ground mustard
- 16 oz. cream cheese
- 8 oz. sour cream
- 2/3 cup shredded cheese
- Juice from 1/2 lemon
- 1 pinch of garlic salt
- 1 pinch of Old Bay seasoning
- 1 splash of milk

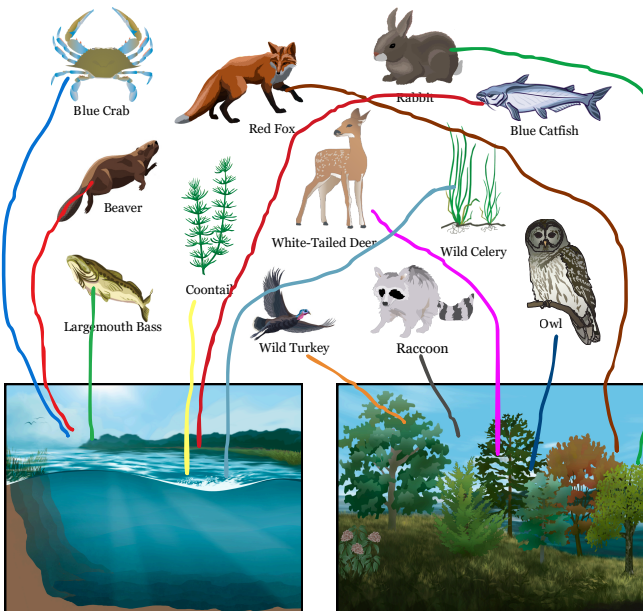
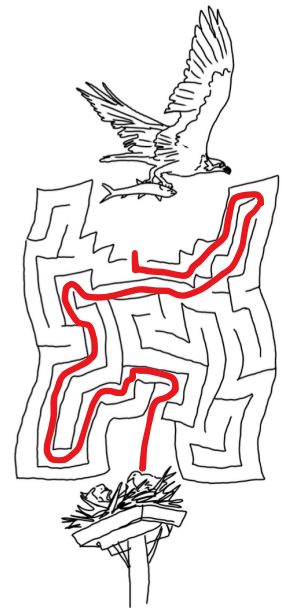
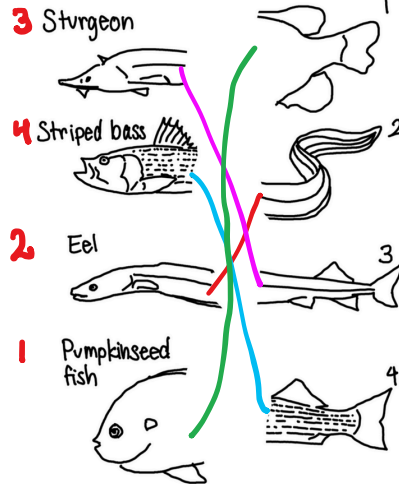
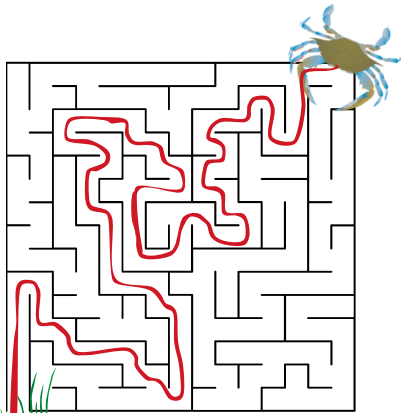
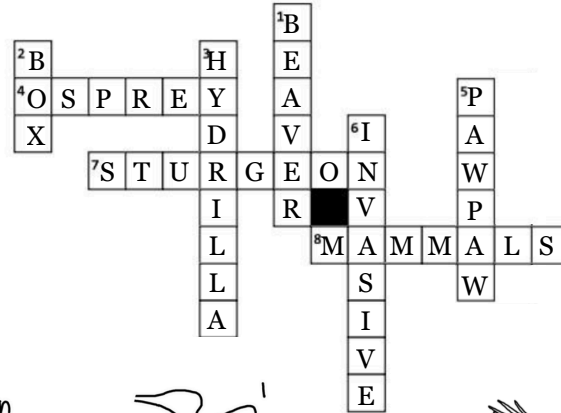
Directions

1. Preheat oven to 325°F.
2. In a large bowl, combine mayonnaise, mustard, cream cheese, sour cream, lemon juice, garlic salt, Old Bay, and half of the shredded cheese until thoroughly blended.
3. Gently fold in the crab meat.
4. Mix in splashes of milk until it reaches a creamy consistency.
5. Place in a well-greased baking dish and top with the remaining shredded cheese.
6. Bake for 30 minutes. Enjoy!

Solutions

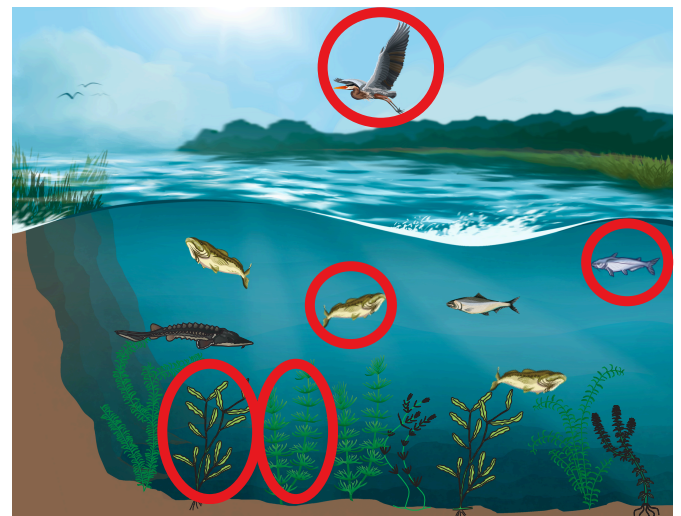


- GOHST TFELE _____ GHOST FLEET
- WBO _____ BOW
- TSNRE _____ STERN
- FEWORL PTO _____ FLOWER POT
- CAHNRO _____ ANCHOR
- NEGNIE _____ ENGINE



Tidal River

Forest



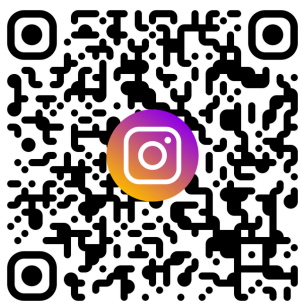
To learn more about Malloys Bay-Potomac River National Marine Sanctuary, access education resources, and find out how to get involved, visit our website at:

<https://sanctuaries.noaa.gov/malloys-potomac/>

or contact us at **malloys.bay@noaa.gov**

To stay updated on the latest sanctuary events and activities, follow us on social media!

@MalloysBayPotomacRiverNMS



**MALLOWS BAY-
POTOMAC RIVER**
NATIONAL MARINE
SANCTUARY

MALLOWS BAY PARK
1440 Wilson Landing Road
Nanjemoy, MD 20662